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10/071,993	02/07/2002	Gerhard Fenkart	003875.P001D5	2660

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EXAMINER
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SONG, HOON K

ART UNIT	PAPER NUMBER
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2882

DATE MAILED: 02/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/071,993

Applicant(s)

FENKART ET AL.

Examiner

Hoon Song

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 44-48 and 50-67 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 44-48 and 50-67 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 February 2002 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 45 and 47 are rejected under 35 U.S.C. 102(b) as being anticipated by Deucher et al. (US 5610968).

Regarding claim 45, Deucher teaches an apparatus which includes:

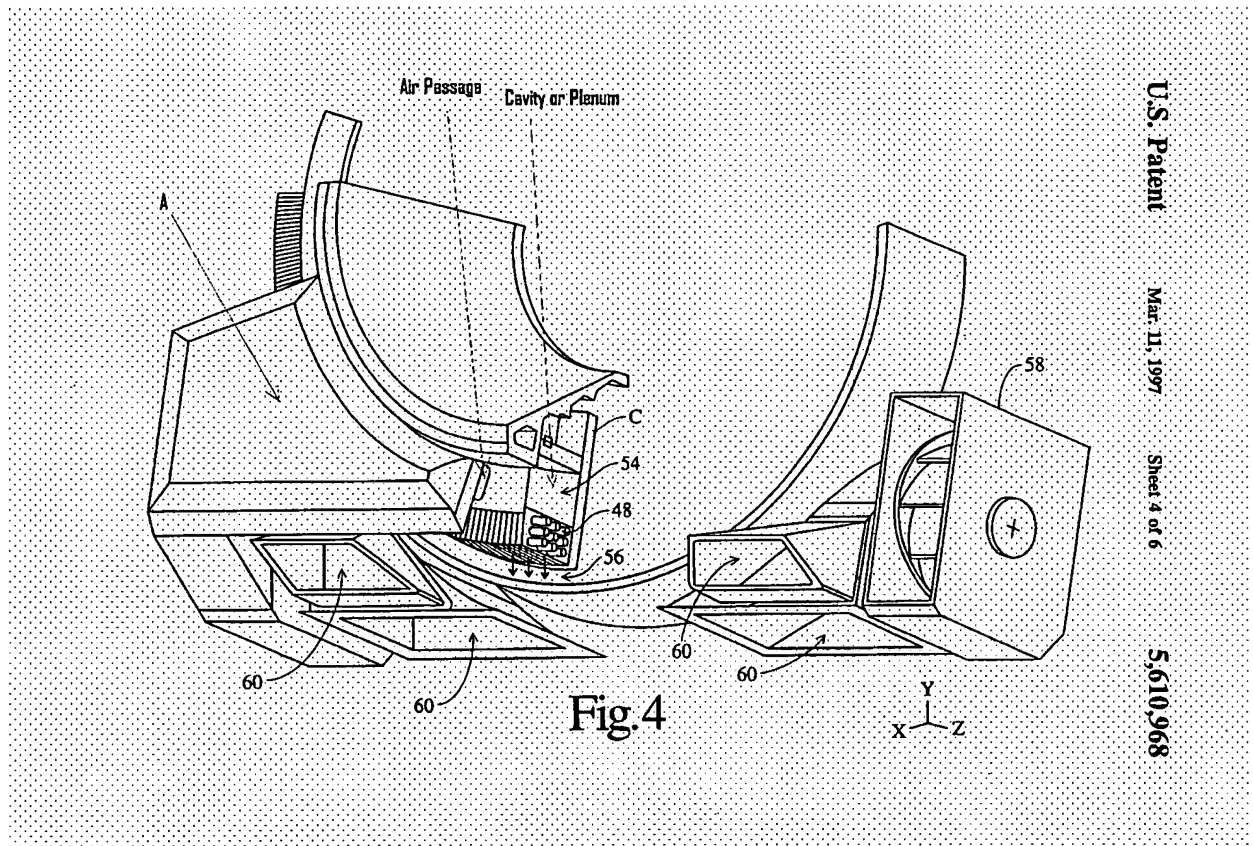
A support frame (figure 1);

CT scanner subsystem (C) rotatably mounted to the frame, the CT scanner subsystem having a gantry defining at least one air passage (air passage, figure 4 below), and a radiator (48) mounted to the gantry;

a plenum (A, figure 4 below) which is mounted to the frame so that the gantry rotate relative to the plenum, the plenum and the gantry jointly defining a confined volume (a space between A and C); and

a fan (58), wherein, when the fan is operated, air is directed from the fan into the confined volume, from the confined volume into the air passage, and from the air passage through the radiator (figure 4 below).

(Note: since air is blown into a space (A), the space can be constituted as a plenum)



Regarding claim 47, Deucher teaches that the gantry defines an enclosure, the air being directed from the air passage into the enclosure in the gantry and from the enclosure in the gantry through the radiator (figure 4).

**Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 44, 50-57, 58 and 63-67 rejected under 35 U.S.C. 103(a) as being unpatentable over Bailey et al. (US 5982843) in view of Deucher et al. (US 5610968).

Regarding claim 44, Bailey teaches an x-ray technique based non-intrusive inspection apparatus which includes:

A base frame (110, 114);

Tunneling (106) mounted to the based frame and having a first end and a second end opposing the first end;

An x-ray source (122) which when operated creates radiation within the tunneling;

Paneling (102) located around the tunneling and the x-ray source so that the paneling and the base frame jointly define a housing (inside of the paneling) around the tunneling and the x-ray source, the housing having entry aperture (see where a vent under the tunneling in figure 1) in proximity to the first end and exit aperture (see where

a vent on side of the paneling in figure 1) proximity to the second end of the tunneling (106), and having an air inlet opening (162)

A fan positioned to draw air through the air inlet opening, the entry aperture sealing (see the vent has a plurality of aperture holes, column 6 line 65+) with the first end of the tunneling to an extent sufficient (the elongated tunneling has extension from a middle of the apparatus) and the exit aperture sealing with the second end of the tunneling to an extent sufficient (figure 1) so that the confines of the housing are at higher than externally of the housing when the fan air into the housing (column 5 line 42+).

However Bailey fails to teach the fan is drawing air through the inlet opening (162) into the housing (closed system).

Deucher teaches a open air circulating system which drawing air into a housing.

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a x-ray system of Bailey with the open air circulating system as taught by Deucher, since the device of Deucher would provide with cheaper air conditioning system for the x-ray system cooling.

Regarding claim 50, Bailey teaches

a support structure (vertical extending pole, figure 1) having a lower end secured to the base frame (110) and extending upward therefrom; and

a CT scanner subsystem (120) rotatably mounted to the support structure, the x-ray source forming part of the CT scanner subsystem and rotating therewith, the housing being externally of the CT scanner subsystem (figure 2a).

Regarding claim 51, Bailey fails to the structure of the CT scanner subsystem.

Deucher teaches the a CT scanner subsystem has a gantry defining at least one air passage and a radiator mounted to the gantry further comprising a plenum, the gantry rotating relative to the plenum, the plenum and the gantry jointly defining a confined volume, wherein, when fan is operated, air is directed from the fan into the confined volume, from the confined volume into the air passage, and from the air passage through the radiator.

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide an X-ray apparatus of Bailey with the gantry structure as taught by Deucher, since the gantry structure of Deucher would effectively cool the rotating gantry with space saving structure (column 2 line 12+).

Regarding claim 52, Bailey teaches that the air pressurizes the housing after flowing through the radiator (column 5 line 42+).

Regarding claim 53, Bailey teaches an air-conditioning unit (140); and a duct connecting the air-conditioning unit with the plenum (150) so that air is directed from the air-conditioning unit through the duct into the confined volume (see where vent, 142 is directed to).

Regarding claim 54, Bailey teaches that the air flows (162) through the fan before flowing through the housing (figure 3).

Regarding claim 55, Bailey teaches that the air is re-circulated by the fan after pressurizing the housing (figure 4).

Regarding claim 56, Bailey teaches that the fan is located externally of the housing (figure 4).

Regarding claim 57, a conveyor system having at least one belt, at least partially located in the tunneling, which, upon movement, is capable of transporting an object through at least a portion of the tunneling.

Regarding claim 58, Bailey teaches  
a support structure (A) having a lower end secured to the base frame and extending upward therefrom; and  
a CT scanner subsystem rotatably mounted to the support structure, the x-ray source forming part of the CT scanner subsystem and rotating therewith, the housing being externally of the CT scanner subsystem and the belt transporting the object through the CT scanner subsystem (figure 1 and 1a).

Regarding claim 63, Bailey teaches a method of operating an x-ray technique-based non-intrusive inspection apparatus (8) which includes:

operating an x-ray source (122) to radiate confines of tunneling (106); and  
operating a fan to draw air and a housing defined externally of the tunneling and internally of paneling (102) around the tunneling, air pressurizing the housing (column 5 line 38+).

However Bailey fails to teach that the fan is drawing air into the housing (closed system).

Deucher teaches a open air circulating system which drawing air into a housing.



It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a x-ray system of Bailey with the open air circulating system as taught by Deucher, since the device of Deucher would provide with cheaper air conditioning system for the x-ray system cooling.

Regarding claim 64, Bailey teaches that the air is re-circulated by the fan after pressurizing the housing (figure 4).

Regarding claim 65, Bailey teaches that rotating a CT scanner subsystem (120), the x-ray source forming part of the CT scanner subsystem and rotating therewith (figure 2a).

Regarding claim 66, Bailey teaches that directing the air through the CT scanner subsystem and through a radiator (146) of the CT scanner subsystem (figure 4).

Regarding claim 67, Bailey teaches that conveying an object on a belt through the CT scanner subsystem (figure 1).

Claims 46, 48 and 60-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deucher et al. (US 5610968) in view of Bailey et al. (US 5982843).

Regarding claim 46, Deucher teaches

A duct which connecting the plenum and outside air, but fails to teach an air-conditioning unit (140).

Bailey teaches an air conditioning unit which is used in an X-ray cooling system.

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide an X-ray apparatus of Deucher with the air-conditioning unit as taught by Bailey, since the device of Bailey would provide the x-ray apparatus of

Deucher with more cooled air into a headed space, thus it will cool the system more rapidly.

Regarding claim 48, Deucher fails to teach the system is including tunneling mounted to the support frame and having a first end and a second end opposing the first end but fails to teach a paneling located around the tunneling and the CT scanner subsystem so that the paneling and the support frame jointly defines a housing around the tunneling and the CT scanner subsystem, the housing having a entry aperture in proximity to the first end and an exit aperture in proximity to the second end of the tunneling and having an air inlet opening wherein the fan is positioned to draw air through the air inlet opening, into the housing, the housing, being formed, the entry aperture sealing with the second end of the tunneling to an extent sufficient so that the confines of the housing are at higher pressure than externally of the housing when the fan draws air into the housing.

Bailey teaches a tunneling (106) mounted to the support frame and having a first end and a second end opposing the first end and paneling (102) located around the tunneling and the CT scanner subsystem (120) so that the paneling and the support frame jointly defines a housing around the tunneling and the CT scanner subsystem, the housing having a entry aperture (see where aperture under the front entry) in proximity to the first end and an exit aperture in proximity to the second end of the tunneling and having an air inlet opening (162) wherein the fan is positioned to draw air through the air inlet opening, into the housing, the housing, being formed, the entry aperture sealing (see the aperture cover) with the second end of the tunneling to an extent sufficient so

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that the confines of the housing are at higher pressure than externally of the housing when the fan draws air into the housing (column 5 line 43+).

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide an x-ray apparatus of Deucher with the paneling and housing structure as taught by Bailey, since the apparatus structure of Bailey would provide the x-ray apparatus of Deucher with dust free environment (column 5 line 43+).

Regarding claim 60, Bailey teaches paneling (102) around the CT scanner subsystem.

Regarding claim 61, Bailey teaches the air enters a housing defined within the paneling after flowing through the radiator (figure 4).

Regarding claim 62, Bailey teaches that the housing is defined between the CT scanner subsystem and the paneling (figure 4).

Claim 59 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bailey as modified by Deucher as applied to claim 58 above, and further in view of Peschmann (US 5182764).

Regarding claim 59, Bailey as modified by Deucher fails teaches an x-ray line scanner subsystem radiating the object prior to being radiated by the CT scanner subsystem.

Peschmann teaches the line scanner (figure 1).

In view of Peschmann, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to adopt the line scanner in order to determine exact position of the object on the conveyor (column 4 line 5+). Accordingly,

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one would be motivated to adopt the line scanner because it would save time by eliminating the necessity of CT scanning the entire object (column 4 line 18+).

***Response to Arguments***

Applicant's arguments with respect to claims 44-48 and 50-67 have been considered but are moot in view of the new ground(s) of rejection.


Restriction requirement on previous action has been withdrawn.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoon Song whose telephone number is (571) 272-2494. The examiner can normally be reached on 8:30 AM - 5 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Glick can be reached on (571) 272 - 2490. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

  
DAVID V. BRUCE  
PRIMARY EXAMINER

Hoon Song 2/2/04

HKS